Document Number 4

Entry 4 of 7 File: USPT Feb 17, 1981

DOCUMENT-IDENTIFIER: US 4251519 A
TITLE: Process for the prevention and reduction of elevated blood cholesterol and triglycerides levels

ABPL:
This application covers a process of lowering or preventing an increase in the level of cholesterol and triglycerides in the blood of humans and animals by including a yeast product or yeast fraction in the daily diet in an amount of up to 30% of the total food intake. The preferred additive is yeast glycan as described in U.S. Pat. No. 3,867,554.

DEPR:
We have discovered that yeast cells, fractured yeast cells, and fractions of yeast, including yeast protein isolate, are hypocholesterolemic and hypolipidemic agents, when incorporated into an animal dietary. Those fractions that contain the cell walls of yeast are particularly effective. This effectiveness is fortuitous because the fractions containing the cell walls of yeast were developed for use as functional food ingredients for man. The process for obtaining the cell wall product, the composition, and food uses thereof are described in U.S. Pat. No. 3,867,554 issued on Feb. 18, 1975. We have called this product yeast glycan. Glycan is the isolated, comminuted cell walls of yeast. Glycan serves as a non-caloric thickener in liquid food systems at levels from 0.5% to greater than 10%. Furthermore, glycan imparts a fatty mouthfeel to liquid food systems that are devoid of fat, which is a recognized desirable attribute to those versed in the food art. Therefore, glycan can be incorporated into the human diet at sufficiently high levels to be effective in reducing blood cholesterol and triglycerides levels and still give a desirable food product. Furthermore, extensive testing has demonstrated the safety of glycan. Thus, glycan is safe to consume, efficacious as a hypocholesterolemic and hypolipidemic agent, and provides an organoleptically appealing food product.

DEPR:
The data of Example No. 1 show that the incorporation of glycan into a diet virtually devoid of cholesterol significantly reduces the serum cholesterol and triglycerides compared to an equal amount of non-nutritive-cellulose type fiber, such as Alpha-Cel. That is, the hypocholesterolemic and hypolipidemic effect observed in the diet containing glycan is not due to a reduction of sucrose in the diet, but is due to a glycan or yeast fraction effect per se. As may be seen, the cholesterol measurement in the blood after being fed the diet is not dependent on the amount of cholesterol in the foods which make up the diets. For example, Diet No. 1 contained less in the diet itself than Diet No. 3, but the blood of the rat fed Diet No. 3 has significantly less cholesterol than is in the blood of the rat fed Diet No. 1.

Document Number 11

Entry 11 of 15 File: USPT Aug 23, 1988

US-PAT-NO: 4765992
DOCUMENT-IDENTIFIER: US 4765992 A

TITLE: Stimulation of alcoholic fermentation by adsorption of toxic substances with cell walls

DATE-ISSUED: August 23, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Geneix; Catherine	Fontainebleau	N/A	N/A	FRX
Lafourcade; Suzanne L.	Bordeaux	N/A	N/A	FRX
Ribereau-Gayon; Pascal	Bordeaux	N/A	N/A	FRX

US-CL-CURRENT: 426/15; 426/11, 426/13, 435/161, 435/820

ABSTRACT:

Substances that are toxic to yeast and which cause cessation of fermentation during alcoholic fermentation are adsorbed by microorganism cell walls added to a medium being fermented. The cell walls are from a gram-positive microorganism such as yeast, and are obtained by boiling or autolysis of the microorganism followed by washing material recovered. The cell walls can be added before or during fermentation, and may be added to a previously fermented medium followed by inoculating with new yeast. The toxic substances may be certain fatty acids and their ethyl esters, pesticide residues and substances secreted by certain microorganisms. Preferably, the cell walls are added when making wine, and the medium may contain Botrytis cinerea.
10 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

Document Number 1

Entry 1 of 10 File: USPT Jul 13, 1999

DOCUMENT-IDENTIFIER: US 5922373 A
TITLE: Process for preparing a soy protein feed with enhanced nutritional value

BSPR:
The invention also relates to the MSF feed which comprises a modified soy flour and yeast cell components, primarily yeast cell walls, and to the process for feeding with the MSF feed.

BSPR:
The present invention also relates to an MSF feed produced by this novel process. The MSF feed produced by this process comprises a modified flour component, which is a modified soy flour, and components of dead yeast cells, primarily yeast cell walls. Unlike conventional soy flour, MSF feed does not induce diarrhea, poor growth or the weight loss associated with an allergic response. Thus, MSF feed is a useful addition to the diets of young domestic animals, including, for example, calves, lambs and pigs. The MSF feed is also useful as a food for humans particularly where an allergic reaction to soy flour is a problem. In addition, the MSF feed possesses better suspending and dispersing characteristics in liquids, such as water, than conventional soy flour.

Document Number 2

Entry 2 of 2 File: USPT Feb 18, 1975

DOCUMENT-IDENTIFIER: US 3867554 A
TITLE: Yeast glycan and process of making same

ABPL:
This application covers a yeast product which is derived from ruptured yeast cell walls and is known as yeast gum or yeast glycan. The yeast glycan is separated from the soluble parts of the yeast, purified, and dried. The yeast glycan increases the viscosity of aqueous fluids when rehydrated. The suspensions of yeast glycan also have a bland flavor, a "fat-like" mouth feel, and a sheen in appearance. Yeast glycan can be substituted for fat in certain dietary type food products, such as salad dressing, ice cream, etc.

BSPR:
We have further discovered that the addition of this yeast glycan to liquid food systems, in the proper proportions, gives the food product a "fat-like" mouthfeel even when these food products contain little or no fat. This is very useful in formulating low-calorie products, such as salad dressing, ice cream, puddings, sour cream based dips, etc.

BSPR:
We also have discovered that satisfactory yeast glycan preparations can be derived from not only the baker's yeast strains, such as Saccharomyces cerevisiae; but also from brewer's yeast strains, such as Saccharomyces carlsbergensis; a lactose utilizing food yeast, Sacharomyces fragilis; and strains of Candida such as C. utilis. Saccharomyces fragilis has recently been reclassified to Kluyueromyces fragilis. It has further been discovered that the yeast glycans can be derived from these various strains of yeast which have been grown on a variety of media. The glycans from different strains vary in some degree in their composition, but all have the ability to increase the viscosity of water when isolated by the process described in the invention.

DEPR:
The yeast glycans rehydrate to viscous suspensions which have suspension freeze-thaw stability, and are capable of conferring a full-fat mouth feel despite the absence of fat in the yeast glycan and in the food formulation. The ability to form viscous suspensions is shown in Table V.

DEPR:
At the present time, at least 10 percent oil is required in even low-calorie products such as low calorie spoonable salad dressings, in order to obtain the "fat-like" mouth feel. We have found that the oil content of many food systems can be further reduced if yeast glycan is incorporated. Formulation of some of these systems are presented in Examples 6, 7, 8 and 9. The counterpart system is also presented.

7/5/1 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

11114890 PASCAL No.: 93-0621914
Absence of cell wall chitin in Saccharomyces cerevisiae leads to resistance to Kluyveromyces lactis killer toxin
TAKITA M A; CASTILHO-VALAVICIUS B
Univ. Sao Paulo, inst. chemistry, dep. biochemistry, Sao Paulo SP 04023, Brazil
Journal: Yeast : (Chichester), 1993, 9 (6) 589-598
ISSN: 0749-503X CODEN: YESTE3 Availability: INIST-21003; 354000034245620040
No. of Refs.: 24 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English

English Descriptors: Saccharomyces cerevisiae; **Yeast**; **Mycotoxin** ; Sensitivity resistance; **Cell wall**; Chemical composition; Chitin; Mechanism of action; Chitin synthase; Mutation; Defectivity; Temperature; Environmental factor
Broad Descriptors: Ascomycetes; Fungi; Thallophyta; Enzyme; Toxin; Ascomycetes; Fungi; Thallophyta; Enzyme; Toxine; Ascomycetes; Fungi; Thallophyta; Enzima; Toxina
French Descriptors: Saccharomyces cerevisiae; Levure; **Mycotoxine**; Sensibilite resistance; Paroi cellulaire; Composition chimique; Chitine; Mecanisme action; Chitin synthase; Mutation; Defectivite; Temperature; Facteur milieu; Gene CAL1; Kluyveromyces lactis

24/3,AB/1 (Item 1 from file: 76)
DIALOG(R)File 76:Life Sciences Collection

01385720 2294996
Involvement of a cell wall receptor in the mode of action of an anti-Candida toxin of Pichia anomala .
Sawant, A.D.; Ahearn, D.G.
Lab. Microb. and Biochem. Sci., Georgia State Univ., Atlanta, GA 30303, USA
ANTIMICROB. AGENTS CHEMOTHER. vol. 34, no. 7, pp. 1331-1335 (1990.)
DOCUMENT TYPE: Journal article LANGUAGE: ENGLISH
SUBFILE: Microbiology Abstracts Section C: Algology, Mycology and Protozoology; Microbiology Abstracts Section A: Industrial and Applied Microbiology

Hanes-Woolf, Dixon, and Hill plots of growth rates of Candida albicans RC1 grown in various concentrations of glucose and a Pichia anomala WC65 immunofluorescence microscopy with antitoxin antibodies demonstrated binding of the toxin to the cell wall. Resistance to the toxin of a mutant Saccharomyces cerevisiae deficient in cell wall beta -1-6-D-glucan suggests that the glucan either served as the receptor or influenced the number or composition of the receptor. Immunofluorescence that appeared to be associated with the cell membrane of toxin-treated spheroplasts of C. albicans was also observed. Spheroplasts of the resistant mutant of S. cerevisiae were sensitive to the toxin.

24/5,KWIC/6 (Item 1 from file: 98)
DIALOG(R)File 98:General Sci Abs/Full-Text
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01267075 H.W. WILSON RECORD NUMBER: BGSI88017075
Molecular structure of the cell wall receptor for killer toxin KT28 in Saccharomyces cerevisiae.
Schmitt, Manfred
Radler, Ferdinand
Journal of Bacteriology (J Bacteriol) v. 170 (May '88) p. 2192-6
DOCUMENT TYPE: Feature Article
SPECIAL FEATURES: bibl il ISSN: 0021-9193
LANGUAGE: English
COUNTRY OF PUBLICATION: United States
RECORD TYPE: Citation RECORD STATUS: Corrected or revised record

DESCRIPTORS:
Mycotoxins; Saccharomyces; **Cell walls**; Chemoreceptors

DESCRIPTORS:
Mycotoxins; Saccharomyces; **Cell walls**; Chemoreceptors

19/3,AB/24 (Item 1 from file: 98)
DIALOG(R)File 98:General Sci Abs/Full-Text

02512083 H.W. WILSON RECORD NUMBER: BGSI93012083
Investigation of a killer strain of Zygosaccharomyces bailii.
Radler, Ferdinand
Herzberger, Susanne; Schonig, Inge
The Journal of General Microbiology (J Gen Microbiol) v. 139 (Mar. '93) p. 495-500
SPECIAL FEATURES: bibl il ISSN: 0022-1287
LANGUAGE: English
COUNTRY OF PUBLICATION: United Kingdom

ABSTRACT: The **yeast** Zygosaccharomyces bailii strain 412 was found to liberate a killer toxin (KT412) lethal to sensitive strains of Saccharomyces cerevisiae and Candida glabrata. Culture supernatants of the killer strain were concentrated by ultrafiltration and the extracellular protein was purified by gel filtration and ion-exchange chromatography. Gel filtration and SDS-PAGE of the electrophoretically homogeneous killer protein indicated an apparent molecular mass of 10 kDa. The killer toxin KT412 is probably not glycosylated since it did not show any detectable carbohydrate structures. KT412 was **bound** to sensitive but not to resistant **yeast** cells. The mannan, and not the glucan, fraction of the cell wall of the sensitive **yeast** was the primary target for the killer toxin **binding**. The killer strain Z. bailli 412 contained three double-stranded RNA plasmids of 1.9, 2.9 and 4.0 kb. Curing by cycloheximide resulted in the concomitant loss of killer activity and the 1.9 kb dsRNA species that is therefore egarded as equivalent to the killer-toxin-coding M-plasmids of S. cerevisiae. Reprinted by permission of

17/5/1 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

09259249 PASCAL No.: 91-0049624
Killer toxin of Hanseniaspora uvarum
RADLER F ; SCHMITT M J ; MEYER B
Weinforschung Johannes Gutenberg-Univ. , Inst. Mikrobiologie, Mainz 6500, Federal Republic of Germany
Journal: Archives of Microbiology, 1990, 154 (2) 175-178
ISSN: 0302-8933 CODEN: AMICCW Availability: INIST-856; 354000009406440120/NUM
No. of Refs.: 17 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: Federal Republic of Germany
Language: English

Culture supernatants of the killer strain were concentrated by ultrafiltration and the extracellular killer toxin was precipitated with ethanol and purified by ion exchange chromatography. SDS-PAGE of the electrophoretically homogenous killer protein indicated an apparent molecular mass of 18000. Additional investigations of the primary toxin **binding** sites within the cell wall of sensitive **yeast** strains showed that the killer toxin of Hanseniaspora uvarum is **bound** by beta

English Descriptors: Toxin; Purification; Molecular weight determination; Biological receptor; **Cell wall**; Glucan; Gel electrophoresis; **Mycotoxin**; **Yeast**; Hanseniaspora
Broad Descriptors: Ascomycetes; Fungi; Thallophyta; Ascomycetes; Fungi; Thallophyta; Ascomycetes; Fungi; Thallophyta

French Descriptors: Toxine; Purification; Determination masse moleculaire; Recepteur biologique; Paroi cellulaire; Glucane; Electrophorese gel; **Mycotoxine**; Levure; Hanseniaspora; Toxine killer